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From:

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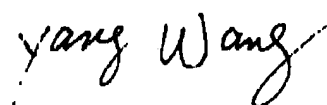
Date: October 8, 2005

Re: PTOL-413A form. Patent application/Control Number: 10/764,252. Art Unit: 2881.

Dear David,

Thank you for the phone conversation on October 7, 2005 and your requirement of filling a PTOL-413A form for giving me a telephone interview. Attached please see the form and brief description.

Sincerely yours,



(Yang Wang)

PTOL-413A (05-0-)  
Approved for use through 07/31/2008. OMB 0651-0001  
U.S. Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

### Applicant Initiated Interview Request Form

Application No.: 10/764252 First Named Applicant: YANG WANG  
Examiner: David Vanore Art Unit: 2881 Status of Application: pending

#### Tentative Participants:

(1) David Vanore (2) Yang Wang  
(3) \_\_\_\_\_ (4) \_\_\_\_\_

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Proposed Date of Interview: OCT. 12-21 Proposed Time: 8:00-10:00 (AM/PM)

#### Type of Interview Requested:

(1) ☒ Telephonic (2) ☐ Personal (3) ☐ Video Conference

Exhibit To Be Shown or Demonstrated: ☒ YES ☐ NO

If yes, provide brief description: to see attached

### Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) <u>to see attached</u>	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Continuation Sheet Attached					

#### Brief Description of Arguments to be Presented:

An interview was conducted on the above-identified application on \_\_\_\_\_.  
**NOTE:** This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

Yang Wang  
Applicant/Applicant's Representative Signature

\_\_\_\_\_  
Examiner/SPE Signature

YANG WANG  
Typed/Printed Name of Applicant or Representative

\_\_\_\_\_  
Registration Number, if applicable

This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 24 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Continuation Sheet (PTCL 413A)

**Exhibit and brief description to be presented:**

- Issue #1: variations of the form and language of claims 29, 30, 33, 34, 37, 38, 42, 49 and 52 concerning "scanning method" to put them in allowable form

As indicated and discussed in the examiner's interview summary conducted on July 29, 2005, the examiner suggested the applicant to change the method claim, for example claim 29, to recite only the device and the method steps of operation in functional language form. The applicant amended the method claims, for example claim 29, as follows:

29. (Currently amended) The ion trap of A method of operating an ion trap in claim 3, wherein said ion trap is adapted for comprising: keeping amplitude and frequency of the RF voltage or amplitude and period of the periodic voltage at predetermined values; simultaneously sweeping or scanning the amplitude of the DC voltage and the amplitude and frequency of the AC voltage vs. time to eject ion mass from the ion trap one after another.

The examiner rejected it and "adapted for" was said to be a new term introduced. But the applicant thought that "adapted for" is a standard way of introducing functional limitations into apparatus claim. To expedite the process, the applicant is hopeful to get guidance and clarification from the examiner to put these scanning method claims in proper allowable form.

A couple of changes the applicant could think of for interview discussion are:

- Not use "adapted for" term:  
29. (Currently amended) The ion trap of A method of operating an ion trap in claim 3, wherein for comprising: keeping the amplitude and frequency of the RF voltage or amplitude and period of the periodic voltage of the ion trap being kept at predetermined values; simultaneously sweeping or scanning the amplitude of the DC voltage and the amplitude and frequency of the AC voltage vs. time of the ion trap being simultaneously swept or scanned to eject ion mass from the ion trap one after another.
- Change it to independent form so the ion trap limitation from claim 3 is folded into the preamble:  
29. (Currently amended) A method of operating an ion trap wherein the ion trap comprising: a three-dimensional rotationally symmetric ring electrode and two cap electrodes with surfaces facing toward the inside of the ion trap, each said two cap electrodes being further composed of a first cone electrode and a second disk electrode; a RF or periodic circuitry constructed and arranged for applying a RF or periodic voltage to said ring electrode to generate a main quadrupole field in said ion trap; an AC circuitry constructed and arranged for applying an AC voltage to said disk electrodes of said two cap electrodes to generate a dipole field in said ion trap; a DC circuitry constructed and arranged for applying an DC voltage

Continuation Sheet (PTOL-413A)

to said cone electrodes of said two cap electrodes to generate an electrically variable electrostatic octopole field in said ion trap, the method comprising: keeping amplitude and frequency of the RF voltage or amplitude and period of the periodic voltage at predetermined values; simultaneously sweeping or scanning the amplitude of the DC voltage and the amplitude and frequency of the AC voltage vs. time to eject ion mass from the ion trap one after another.

- Issue #2: applicant's amendment of claim 1 to change term "electrostatic" to "DC" said to introduce new issue.

As the examiner stated in office action dated 4/5/2005, the reason is set forth for allowing claim 3.

Regarding claims 3 and 7, the prior art fails to teach or suggest the application of a DC potential to a set of the component electrodes in the cap electrodes of a three dimensional ion trap. By contrast, the prior art most relevant to an ion trap having cap electrodes divided into multiple component electrodes, Franzen et al., utilizes only an RF signal to create dipole, quadrupole, and octupole fields in a three dimensional ion trap. Claims 43-44, 47-48, and 50-51 are similarly indicated as having allowable subject matter by virtue of their dependency.

The applicant's submitted claim 1 amendment (to see copied below) was in light of the examiner's reasons for allowing claim 3 – use DC potential to generate DC multipole field. Although "electrostatic" is equivalent to "DC", the applicant decided to make submitted amendment to expedite the process instead of arguing. As the applicant stated in response to office action, applying different type of potentials (DC vs. RF) will generate different types of multipole field (DC or electrostatic vs. RF).

1 (Currently amended) An ion trap, comprising: a three-dimensional rotationally symmetric ring electrode and two cap electrodes with surfaces facing toward the inside of the ion trap, each said two cap electrodes being further composed of a first cone electrode and a second disk electrode; a first means for generating a time-varying, substantially quadrupole field, a second means for generating an independent dipole field; a third means for generating an independent, electrically variable electrostatic DC multipole field.